

REMARKS

The Office Action dated April 28, 2005 and the Advisory Action dated July 8, 2005 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-23 are submitted for consideration.

Claims 1-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,276,406 to Samay. The Office Action alleges that Samay teaches all of the limitations of the claims except for the first circuitry having a length which is substantially less than a quarter wavelength of different frequencies and a length in the range of .10 to .25 degrees of a signal envelop frequency and a length in the range of .15 to .20 degrees of a signal envelope frequency and a length in the range of .17 degrees of a signal envelope frequency. However, the Office Action alleges that it would have been obvious to implement the specific values of the components of the claims since such values have not been shown to have any criticality. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in independent claims 1 and 23 and/or the claims dependent thereupon.

Claim 1, upon which claims 2-22 depend, recites a power amplifier including input means for receiving signals at a plurality of different frequencies. The power amplifier also includes a power transistor for amplifying received signals and first circuitry connected at one end to the power transistor and at another end to a relatively low frequency shorting circuitry. The first circuitry being such that the another end is an

open circuit to the different frequencies. The first circuitry has a length which is substantially less than a quarter wavelength of the different frequencies.

Claim 23 recites an integrated circuit including input means for receiving a signals at a plurality of different frequencies and a power transistor for amplifying received signals. The integrated circuit also includes a first circuitry connected at one end to the power amplifier and at another end to a relatively low frequency shorting circuitry. The first circuitry being such that the another end is an open circuit to the different frequencies. The first circuitry having a length which is substantially less than a quarter wavelength of said different frequencies.

As outlined below, Applicant submits that the cited reference of Samay does not teach or suggest the elements of claims 1-23.

Samay teaches an RF input terminal coupled to the gate of transistor Q1 via capacitor C1, C2, C3 and inductors L1 and L3. A connection node “P”, at the junction of L1, L3 and C3 also is fed by a voltage divider comprised of resistors R1 and R2 to set the gate to source voltage and thus, the DC operating point of Q1. A feedback network comprised of capacitor C5, resistor Rf and inductor L5 is connected between node “P” and the junction of inductor L4, L6 and L7. Capacitor C5 is a large value DC blocking capacitor. Resistor Rf and inductor L5 serve to adjust the gain and terminal impedance of the amplifier. Inductor L6 and capacitor C6 serve as a low pass output matching circuit. Col. 3, lines 1-34 and Figure 1.

Applicant submits that Samay simply does not teach or suggest the combination of features clearly recited in claims 1 and 23. The Office Action maintains the position that the feature of claims 1 and 23 reciting the first circuitry having a length which is substantially less than a quarter wavelength of the different frequencies would have been obvious to one of ordinary skill in the art. However, the Office Action has provided no basis for such an assertion. The previous Office Action alleged that it would have been obvious to implement the specific values of the components since they are “based on the routine experimentation to obtain the optimum operating parameters.” The current Office Action now argues that “the specific values of the components have not been shown to have any criticality.” However, Applicant submits that neither Office Action has provided any evidence to support these assertions.

Contrary to the Office Action’s allegations that “the specific values of the components have not been shown to have any criticality,” in paragraph 0027 of the present application, it is explained that a quarter wavelength path in a standard prior art amplifier significantly degrades linearity and also cause electrical memory effects.

In paragraph 0039 of the present application, it is also explained that instead of a quarter wave line, a band stop filter having a short electrical length is implemented in embodiments of the invention. Such a band stop filter provides a low impedance path for low frequency components to reach the low frequency shorting capacitors while at the same time blocking DC to ground. The band stop filter also allows the low frequency shorting capacitors to be placed very close to the power transistor’s output terminal.

Furthermore, at paragraph 0037 of the present application, the advantage of embodiments of the present invention in reducing power amplifier memory is explained. Additionally, the improvements in terms of linearity are explained in terms of simulations and practical results. It is thus evident from the present application that implementing a low electrical length circuitry between a power transistor and low frequency shorting circuitry as recited in claim 1 is highly advantageous.

As noted above, the Office Action stated that the first circuitry having a length which is substantially less than a quarter wavelength of the different frequencies, as recited in claims 1 and 23, would have been obvious to one of ordinary skill in the art over the cited reference of Samay. As explained in the present application, it is very common for the prior art amplifiers to incorporate a quarter wavelength path. There is no teaching or suggesting in Samay for one skilled in the art to dispense with the common amplifier design and instead use a short length circuitry as recited in claims 1 and 23. Although the Office Action asserted that the first circuitry having a length which is substantially less than a quarter wavelength of the different frequencies as recited in claims 1 and 23 would have been obvious since it is “based on routine experimentation to obtain the optimum operating parameter,” no evidence of the alleged routine experimentation has been supplied.

Although Samay relates to power amplifier, which is the same general field as the present invention, Samay does not discuss or suggest the advantages of using circuitry having an electrical length as claimed in the present invention. In fact, Samay simply

does not make any mention of electrical length or the impact which it can have on the performance of a power amplifier. Hence, Samay provides no motivation to one of ordinary skill in the art to consider the effect of electrical length. As such, based on Samay, a skilled person would not have been prompted to modify the teachings in Samay in such a way as to obtain the claimed invention.

As noted in our previous Response, MPEP 2143.01 instructs that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ 2d 1430 (Fed. Cir. 1990).” MPEP 2143.01 further instructs that “[a]lthough a prior art device ‘may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.’” Applicant respectfully submits that the cited reference does not provide such a suggestion or motivation. Applicant submits that the only motivation to obtain the claimed invention is found in Applicant’s own application. MPEP 2141, under the heading “Basic Consideration Which Apply to Obviousness Rejections,” points out that “the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention.” (See also Hodosh v. Block Drug Co., Inc. 786 F.2d 1136, 229 USPQ 182 (Fed. Cir. 1986).) The Federal Circuit has clearly held that “the motivation to combine references cannot come from the invention itself.” Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc., 21 F.3d 1068, 30 USPQ 2d 1377 (Fed. Cir. 1993).

In view of MPEP 2144.03, absent any teaching or suggestion in the prior art to adapt the teachings of Samay to meet the claimed invention, and because the rejection lacks evidence of a teaching or suggestion that the features would have been obvious to one of ordinary skill, the rejection under 35 U.S.C. §103(a) is improper. Accordingly, Applicants respectfully submit that the rejections under 35 U.S.C. §103(a) should be withdrawn and Applicants respectfully request allowance of claims 1-23 and the prompt issuance of a Notice of Allowability.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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Enclosures: 2 month Extension of Time
RCE Transmittal